

Application No. 10/647,489

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings of claims in the application:

1. **(Original)** A toner comprised of a mixture of a semicrystalline polymer, an amorphous polymer and a crystalline polyolefin; and a colorant.
2. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer possesses from about 10 to about 60 percent crystallinity.
3. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer possesses from about 12 to about 50 percent crystallinity.
4. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer possesses a melting point temperature of from about 50°C to about 110°C.
5. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer possesses a melting point temperature of from about 55°C to about 90°C.
6. **(Original)** A toner in accordance with **claim 2** wherein said semicrystalline polymer possesses a melting point temperature of from about 50°C to about 110°C.

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7. **(Original)** A toner in accordance with **claim 3** wherein said semicrystalline polymer possesses a melting point temperature of from about 50°C to about 110°C.

8. **(Original)** A toner in accordance with **claim 2** wherein said semicrystalline polymer possesses a melting point temperature of from about 55°C to about 90°C.

9. **(Original)** A toner in accordance with **claim 3** wherein said semicrystalline polymer possesses a melting point temperature of from about 55°C to about 90°C.

10. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer is present in an amount of from about 2 to about 30 percent by weight.

11. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer is present in an amount of from about 4 to about 25 percent by weight.

12. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer is polyacetone, polycaprolactone, poly(alkyl vinyl ether), poly(alkyl acrylate), poly(alkyl methacrylate), poly(olefin-vinyl acetate), polyacetal, poly(olefin oxide), poly(olefin oxalate), poly(olefin terephthalate), or poly(dialkyl siloxane).

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13. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer is polyacetone, polycaprolactone, poly(ethyl vinyl ether), poly(dodecyl acrylate), poly(octadecyl acrylate), poly(octadecyl methacrylate), poly(behenylpolyethoxyethyl methacrylate), poly(ethylene-p-carboxy phenoxy-butyrate), poly(vinyl butyral), poly(ethylene-vinyl acetate), poly(hexamethylene oxalate), poly(decamethylene oxalate), poly(ethylene oxide), poly(propylene oxide), poly(butadiene oxide), poly(decamethylene oxide), poly(methyl ethylene terephthalate), or poly(dimethyl siloxane).

14. **(Original)** A toner in accordance with **claim 1** wherein said semicrystalline polymer is polycaprolactone, poly(vinyl butyral), poly(ethylene-vinyl acetate), poly(ethylene oxide), poly(octadecyl acrylate), poly(octadecyl methacrylate), poly(behenylpolyethoxyethyl methacrylate), or poly(ethylene-vinyl acetate).

15. **(Original)** A toner in accordance with **claim 1** wherein said amorphous polymer possesses a glass transition temperature of from about 40°C to about 80°C.

16. **(Original)** A toner in accordance with **claim 1** wherein said amorphous polymer possesses a glass transition temperature of from about 48°C to about 60°C, or wherein said crystalline polyolefin possesses a crystalline percent of from about 60 to about 95 percent.

17. **(Original)** A toner in accordance with **claim 1** wherein said crystalline polyolefin is polyethylene.

18. **(Original)** A toner in accordance with **claim 1** wherein said crystalline polyolefin is polypropylene.

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19. **(Original)** A toner in accordance with **claim 1** wherein said crystalline polyolefin is a copolymer of polyethylene and polypropylene optionally containing functional groups.

20. **(Original)** A toner in accordance with **claim 19** wherein said crystalline polyolefin contains functional carboxy groups, or functional hydroxyl groups.

21. **(Original)** A process for the preparation of a toner comprised of the mixing of a polymer latex comprised of semicrystalline polymer, an amorphous polymer and a crystalline polyolefin and colorant; followed by heating below the amorphous polymer Tg (glass transition) temperature, and then subsequently heating above the amorphous polymer Tg.

22. **(Currently Amended)** A process in accordance with **claim 21** wherein said below Tg is from about 1°C to about 30°C, ~~or wherein said below Tg is from about 1°C to about 20°C.~~

23. **(Currently Amended)** A process in accordance with **claim 21** wherein said above Tg is from about 15°C to about 55°C, ~~or wherein said above Tg is from about 20°C to about 45°C.~~

24. **(Original)** A process in accordance with **claim 21** wherein there is further included a coagulant, and optionally which coagulant is a polyaluminum halide.

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25. **(Original)** A process in accordance with claim 24 wherein said coagulant is a polyaluminum chloride.

26. **(Original)** A process in accordance with claim 24 wherein said coagulant is an organic aliphatic amino ester selected from the group consisting of tri(2-aminoethyl) citrate, 2-aminoethyl ester, 3-aminopropyl ester, 4-aminobutyl ester, 4-aminobutyrate, 5-aminopentanoate, 6-aminocaproate, quaternary ammonium ester, tertiary aminoester, aminosulfonate, aminosulfonite, aminophosphate, and aminophosphorite.

27. **(Original)** A process in accordance with claim 21 wherein said below T<sub>g</sub> heating causes aggregation, and optionally which T<sub>g</sub> temperature is from about 40°C to about 60°C, and said heating above said T<sub>g</sub> enables coalescence, and optionally which heating temperature is from about 75°C to about 97°C.

28. **(Original)** A process in accordance with claim 21 wherein said colorant is a pigment, and wherein said pigment is in the form of a dispersion, which dispersion contains an ionic surfactant, and wherein said process further includes the addition of a polyamine salt that primarily functions as a coagulant to enable aggregation of said latex and said colorant.

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29. **(Original)** A process in accordance with **claim 21** wherein the latex polymer is selected from the group consisting of poly(styrene-butadiene), poly(methylstyrene-butadiene), poly(methyl methacrylate-butadiene), poly(ethyl methacrylate-butadiene), poly(propyl methacrylate-butadiene), poly(butyl methacrylate-butadiene), poly(methyl acrylate-butadiene), poly(ethyl acrylate-butadiene), poly(propyl acrylate-butadiene), poly(butyl acrylate-butadiene), poly(styrene-isoprene), poly(methylstyrene-isoprene), poly(methyl methacrylate-isoprene), poly(ethyl methacrylate-isoprene), poly(propyl methacrylate-isoprene), poly(butyl methacrylate-isoprene), poly(methyl acrylate-isoprene), poly(ethyl acrylate-isoprene), poly(propyl acrylate-isoprene), poly(butyl acrylate-isoprene); poly(styrene-propyl acrylate), poly(styrene-butyl acrylate), poly(styrene-butadiene-acrylic acid), poly(styrene-butadiene-methacrylic acid), poly(styrene-butadiene-acrylonitrile-acrylic acid), poly(styrene-butyl acrylate-acrylic acid), poly(styrene-butyl acrylate-methacrylic acid), poly(styrene-butyl acrylate-acrylonitrile), poly(styrene-butyl acrylate-acrylonitrile-acrylic acid), poly(styrene-butadiene- $\beta$ -carboxyethyl acrylate), poly(styrene-butadiene-acrylonitrile- $\beta$ -carboxyethyl acrylate), poly(styrene-butyl acrylate- $\beta$ -carboxyethyl acrylate), and poly(styrene-butyl acrylate-acrylonitrile- $\beta$ -carboxyethyl acrylate).

30. **(Original)** A toner in accordance with **claim 1** wherein the colorant is carbon black, cyan, yellow, magenta, or mixtures thereof; the toner isolated is optionally from about 2 to about 15 microns in volume average diameter, and the particle size distribution thereof is optionally from about 1.15 to about 1.30; and wherein there is added to the surface of the formed toner metal salts, metal salts of fatty acids, silicas, metal oxides, or mixtures thereof, each in an amount of from about 0.1 to about 10 weight percent of the obtained toner.

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31. **(Original)** A toner in accordance with **claim 3** wherein said semicrystalline polymer possesses a weight average molecular weight  $M_w$  of from about 7,000 to about 200,000, and a number average molecular weight  $M_n$  of from about 1,000 to about 60,000, or wherein said semicrystalline resin possesses a weight average molecular weight  $M_w$  of from about 10,000 to about 150,000, and a number average molecular weight  $M_n$  of from about 3,000 to about 50,000.

32. **(Original)** A toner in accordance with **claim 1** further containing a wax and optionally toner additives.

33. **(Original)** A process comprising the heating of latexes comprised of a first latex, a second latex, and a third latex wherein said first latex contains a semicrystalline polymer, said second latex contains an amorphous polymer, and said third latex contains a crystalline polyolefin and colorants; and wherein said heating comprises a first heating below about the  $T_g$  of said amorphous polymer, and a second subsequent heating above about the  $T_g$  of said amorphous polymer.

34. **(New)** A process in accordance with **claim 21** wherein said below  $T_g$  is from about 1°C to about 20°C.

35. **(New)** A process in accordance with **claim 21** wherein said below  $T_g$  is from about 20°C to about 45°C.